

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-005512**Date Inspected:** 13-Feb-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 645**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1845**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Fabrication**Summary of Items Observed:**

CWI: Mr. Sun Bo

On this date CALTRANS OSM Quality Assurance (QA) Inspector Mr. Paul Dawson arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

OBG Bay 9

Due to an electrical outage the closed rib Production Monitoring Test (PMT) which normally commences around midnight was not started until around 0745 hours today.

The QA Inspector monitored welding of closed rib Production Monitoring Test representing deck plates DP113-0012 and DP192-001 which were welded using one single base plate at approximately 0745 hours using gantry #1. The QA Inspector observed six ZPMC welders using welding procedure specification WPS-B-T-2342-U1(Urib)-4 using the gas metal arc welding process for the root pass and submerged arc welding process for the cover pass of partial penetration groove welds on six PMT closed rib welds at the same time. ZPMC has multiple welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. The QA Inspector observed a welding travel speed of approximately 528 mm per minute for the root passes and 512 mm per minute for the cover passes. As the welding commences, each of the welders is responsible for one of the welding heads. Welder Ms. Xiang Huan Feng, stencil 59416 completed the root pass of weld #1 with a welding current of approximately 380 amps and 30.2 volts and the cover pass welding current of

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

approximately 690 amps and 25.2 volts. Welder Mr. Tiang Shuang Chen, stencil 201788 completed the root pass of weld #2 with a welding current of approximately 360 amps and 30.8 volts and the cover pass welding current of approximately 685 amps and 24.5 volts. Welder Mr. Xhang Shao Hui stencil 59403 completed the root pass of weld #3 with a welding current of approximately 380 amps and 31.3 volts and the cover pass welding current of approximately 685 amps and 25.4 volts. Welder Mr. Chen Jie, stencil 59468 completed the root pass of weld #4 with a welding current of approximately 370 amps and 31.4 volts and the cover pass welding current of approximately 690 amps and 25.0 volts. Welder Ms. Zhang Li Ping, stencil 201840 completed the root pass of weld #5 with a welding current of approximately 380 amps and 31.4 volts and the cover pass welding current of approximately 685 amps and 25.4 volts. Welder Mr. Zhao Cheng Shuang, stencil 59400 completed the root pass of weld #6 with a welding current of approximately 370 amps and 30.5 volts and the cover pass welding current of approximately 680 amps and 24.6 volts.

The QA Inspector performed random visual inspection of the root pass and cover passes and items observed appear to comply with project specifications. Following completion of the welding ZPMC QC CWI Inspector Mr. Sun Bo marked a 500 mm length of the welds as being the areas that are to be representative of this PMT test. The QA Inspector observed ZPMC NDE inspector Ms. Zshuiqing performing ultrasonic of each of the six welds in the areas where Mr. Bo had marked for PMT testing. Following ZPMC's UT acceptance the QA Inspector marked a total of 15 locations where macroetch samples are to be obtained. ZPMC then cut and prepared macroetch samples. ZPMC QC CWI Inspector. Mr. Sun Bo and ABF representative Mr. Huang Wen Guang visually inspected these macroetch samples and documented their acceptance on the ZPMC Production Monitoring Test Plate Inspection Report sheet dated 02-13-2009. The QA Inspector visually inspected each of these macroetch samples and items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector monitored welding of closed rib of deck plate DP113-001 using gantry #1. The QA Inspector observed four ZPMC welders using welding procedure specification WPS-B-T-2342-U1(Urib)-4 using the submerged arc welding process for the cover pass of four partial penetration groove welds on closed rib welds at the same time. ZPMC has multiple flux cored welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. ZPMC QC and ABF representatives were both monitoring this welding.

The QA Inspector observed QC had documented a welding travel speed of 536 mm per minute for the root passes. As the welding commences, each of the welders is responsible for one of the welding heads. Welder Mr. Xhang Shao Hui stencil 59403 completed the root pass of weld #3 with a welding current of approximately 380 amps and 30.6 volts and the cover pass welding current of approximately 680 amps and 25.2 volts. Welder Mr. Chen Jie, stencil 59468 completed the root pass of weld #4 with a welding current of approximately 360 amps and 31.0 volts and the cover pass welding current of approximately 685 amps and 25.0 volts. Welder Ms. Zhang Li Ping, stencil 201840 completed the root pass of weld #7 with a welding current of approximately 350 amps and 30.7 volts and the cover pass welding current of approximately 680 amps and 24.5 volts. Welder Mr. Zhao Cheng Shuang, stencil 59400 completed the root pass of weld #8 with a welding current of approximately 380 amps and 31.0 volts and the cover pass welding current of approximately 685 amps and 23.9 volts. Items observed by this QA Inspector appear to comply with project specifications.

OBG Bay 7

WELDING INSPECTION REPORT

(Continued Page 3 of 4)

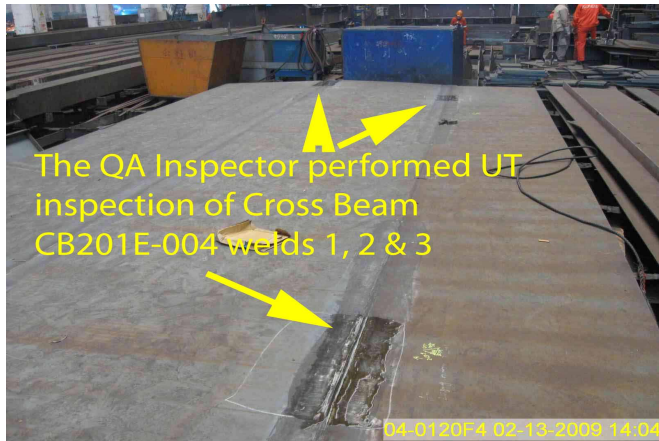
This QA Inspector performed random ultrasonic (UT) inspections of approximately 10 percent length of OBG Side Plate welds SP324-001-064, SP351-001-055 and SP696-001-041. These welds had previously been ultrasonically inspected and accepted by ZPMC inspection personnel and the welds are listed on ZPMC Notification of Witness Inspection document 001978. The QA Inspector observed the welds that were ultrasonically inspected by this QA Inspector appear to comply with AWS D1.5 UT requirements. For additional information on this inspection see the TL6027 Ultrasonic Test Report.

OBG Bay 12

This QA Inspector performed random ultrasonic (UT) inspections of approximately 10 percent length of OBG Deck Plate welds DP565-001-009R1 and DP650-001-011R1. These welds had previously been ultrasonically inspected and accepted by ZPMC inspection personnel and the welds are listed on ZPMC Notification of Witness Inspection document 001976. The QA Inspector observed the welds that were ultrasonically inspected by this QA Inspector appear to comply with AWS D1.5 UT requirements. For additional information on this inspection see the TL6027 Ultrasonic Test Report.

OBG Bay 5

This QA Inspector performed random ultrasonic (UT) inspections of approximately 10 percent length of OBG Cross Beam welds CB201E-004-001, CB201E-004-002 and CB201E-004-003. These welds had previously been ultrasonically inspected and accepted by ZPMC inspection personnel and the welds are listed on ZPMC Notification of Witness Inspection document 001972. The QA Inspector observed the welds that were ultrasonically inspected by this QA Inspector appear to comply with AWS D1.5 UT requirements. For additional information on this inspection see the TL6027 Ultrasonic Test Report.



Summary of Conversations:

See above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Clifford,William	QA Reviewer
